



US009409238B2

(12) **United States Patent**
Sakurai et al.

(10) **Patent No.:** **US 9,409,238 B2**
(45) **Date of Patent:** **Aug. 9, 2016**

(54) **HARD COATING FOR CUTTING TOOL, AND CUTTING TOOL COATED WITH HARD COATING**

(75) Inventors: **Masatoshi Sakurai**, Toyokawa (JP);
Takaomi Toihara, Toyokawa (JP)

(73) Assignee: **OSG CORPORATION**, Toyokawa-shi (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/389,879**

(22) PCT Filed: **Apr. 9, 2012**

(86) PCT No.: **PCT/JP2012/059738**

§ 371 (c)(1),

(2), (4) Date: **Oct. 1, 2014**

(87) PCT Pub. No.: **WO2013/153614**

PCT Pub. Date: **Oct. 17, 2013**

(65) **Prior Publication Data**

US 2015/0072126 A1 Mar. 12, 2015

(51) **Int. Cl.**

B23B 27/14 (2006.01)

B23B 51/00 (2006.01)

(Continued)

(52) **U.S. Cl.**

CPC **B23B 51/00** (2013.01); **C23C 14/345** (2013.01); **C23C 28/321** (2013.01); **C23C 28/34** (2013.01); **C23C 28/341** (2013.01);

(Continued)

(58) **Field of Classification Search**

USPC 51/307, 309; 428/216, 336, 469, 472, 428/698, 699, 701, 702, 704

See application file for complete search history.

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Primary Examiner — Archene Turner

(74) *Attorney, Agent, or Firm* — Oliff PLC

(57)

ABSTRACT

A hard coating for a cutting tool being highly resistant to both wear and seizure; and a cutting tool coated with the hard coating. This hard coating is a multilayer film including two or more of the following layered in alternation: first coating layers including $\text{Ag}_a\text{Cu}_{1-a}$; and second coating layers including a nitride, oxide, carbide, carbonitride, or boride containing at least one element selected from among group IVA, VA, and VIA elements, aluminum, and silicon. Since the atomic proportion for the first coating layers is between 0.2 and 0.4, inclusive, the layering pitch of the first and second coating layers is between 0.2 and 100 nm, inclusive, and the total thickness is between 0.2 and 10.0 μm , inclusive, the coefficient of friction and cutting resistance can be reduced by the inclusion of silver in the coating, and provide a hard coating that exhibits superb lubricity and resistance to seizure.

4 Claims, 4 Drawing Sheets

